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## Comments on the taxonomy of the genus *Cynanthus* (Swainson), with a restricted type locality for *C. doubledayi*

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Howell & Webb (1995) presented a rearrangement of the taxonomy of the hummingbirds of the Mexican near-endemic genus *Cynanthus*, although without explicit justification for changes proposed. They correctly divided the former *C. latirostris* complex into two portions—that of northern and central Mexico (*C. latirostris*), and that of coastal southwestern Mexico (*C. doubledayi*). In addition, they mentioned the form *C. l. lawrencei* of the Islas Tres Marías as a distinct subgroup of *C. latirostris*, at times considered a separate species. While we agree with their conclusions, our examination of series of specimens of each form and several of the types leads us to point out a correction necessary for the accurate documentation of the group's taxonomy.

Nominate *latirostris* was described by Swainson (1827) from the "Tableland of Mexico", a locality later corrected to "Valley of Mexico, near Mexico City" by Moore (1939). Subsequent forms described included *doubledayi*, *toroi*, and *nitidus* of Guerrero and southwestern Mexico, *magicus* of northwestern Mexico, *propinquus* of Guanajuato and Michoacán, and *lawrencei* of the Islas Tres Marías. Clearly, confusion and synonymy are suggested in the plethora of forms named from Guerrero, the subject of the present note.

The name *doubledayi* was first applied by Bourcier (1847) to a specimen apparently now housed in the Loddiges Collection of the Natural History Museum, Tring, allegedly from "Rio Negro", [Brazil]. Subsequently, Salvin & Godman (1889) described *Iache nitida* from a specimen taken by Mrs H. H. Smith at Río Papagaio, Acapulco, carefully contrasting it with what they thought was *doubledayi*:

This beautiful species is most nearly allied with *I. doubledayi*, but the whole throat and breast are of a richer blue, and the head also is shining blue, not green. The specimen of *I. doubledayi* with which we have compared it is stated to be from Chinantla, and is that figured in Gould's 'Monograph of the Humming-Birds'.

Cory (1918) pointed out Bourcier's erroneous type locality, and added a note " =State of Guerrero, Mexico", and a footnote that "the type probably came from State of Guerrero, Mexico". Cory unfortunately did not specify a locality within Guerrero—a source of future confusion. Peters (1945) also cited the correction of the type locality of *doubledayi* as "Guerrero". The synonymy of *nitidus* and *doubledayi* was established by Hartert (1897) and Salvin & Godman (1879–1904), the confusion clearly arising from Salvin and Godman's comparison of the type of *nitidus* with the Gould Chinantla specimen from outside the range of *doubledayi*.

Then began a series of errors and confusions regarding the taxonomy of the group. Ridgway (1892) reported comparisons with "the type of *I. doubledayi*, kindly lent to me by the American Museum of Natural History in New York City". Greenway (1978), however, indicated that the type of *doubledayi* was not at the American Museum—the type of *latirostris*, however, deposited at that institution, carries the name "Bourcier" referring to its authority for the genus *Circe*, and is apparently the source of Ridgway's confusion. A second error was the citation of the subspecies *doubledayi* as ranging in Puebla and northern Oaxaca by Friedmann *et al.* (1950). They also stated erroneously that its type locality had been designated by Gould as Chimantla (=Chiantla, Puebla).

Reviewing specimens of *Cynanthus* in the collections of the U.S. National Museum of Natural History, Natural History Museum (Tring), University of Kansas Natural History Museum, and the Museo de Zoología of the Facultad de Ciencias, Universidad Nacional Autónoma de México, we summarized variation of male plumage characters in the genus (Table 1). This summary of variation, together with comparisons kindly made for us by Michael P. Walters of Bourcier's type of *doubledayi*, indicate that the specimen coincides closely with the populations of coastal southwestern Mexico, differing from the populations of the interior Balsas Basin (*toroī*) in having a blue rather than green forehead and breast. Cory's (1918) designation is correct, but not sufficiently precise—for this reason, we restrict the type locality of *doubledayi* to Acapulco, an important historical collecting locality on the coast of Guererro.

Considering the geographic patterning of zones of abrupt morphological change, it is possible to divide the genus *Cynanthus* into four diagnosable units. These sets of populations may be considered independent phylogenetic lineages, constituting phylogenetic or evolutionary species, as follows:

1. *C. sordidus* (Gould 1859)—Balsas Depression and surrounding arid highland areas.
2. *C. latirostris* Swainson 1827—Southeast Arizona and northern Mexico south to the plains of Colima and the Balsas Depression,

TABLE I  
Summary of geographic situation, species taxa, and distinguishing characters of named forms of *Cynanthus* hummingbirds

| Form                                   | Range  | Type locality                         | Forehead            | Throat           | Breast and belly | Undertail covers | Tail cleft |
|--|--|---------------------------------------|---------------------|------------------|------------------|------------------|------------|
| <i>Cynanthus sordidus sordidus</i>     | Balsas Depression and Valle de Tehuacán      | Oaxaca                                | Dull brownish green | Dull brown       | Dull brown       | Dull grey-brown  | Moderate   |
| <i>Cynanthus latirostris magicus</i>   | Arizona S to Nayarit and Durango             | Mazatlán, Sinaloa                     | Iridescent green    | Iridescent blue  | Iridescent green | White            | Moderate   |
| <i>latirostris propinquus</i>          | Central and eastern Mexico El Bajío          | Valley of Mexico Irapuato, Guanajuato | Iridescent green    | Iridescent blue  | Iridescent green | White            | Moderate   |
| <i>toroi</i>                           | Lower Balsas Depression and Plains of Colima | La Estancita, Guerrero                | Iridescent green    | Iridescent blue  | Iridescent green | White            | Moderate   |
| <i>Cynanthus doubledayi doubledayi</i> | Coast of southwestern Mexico                 | Acapulco, Rio Papagayo                | Iridescent blue     | Iridescent blue  | Iridescent blue  | Blue-black       | Moderate   |
| <i>Cynanthus lawrencei lawrencei</i>   | Islas Tres Marias                            | Isla Tres Marias                      | Iridescent green    | Iridescent green | Iridescent green | White            | Deep       |

including the present subspecies *latirostris*, *magicus* (Mulsant and Verreaux 1872), *propinquus* Moore 1939, and *toroi* (Berlioz 1937).

3. *C. doubledayi* (Bourcier 1847)—Coastal plain of Mexico in Guerrero, Oaxaca, and extreme southwestern Chiapas.
4. *C. lawrencei* (Berlepsch 1887)—Confined to the islands María Madre and María Cleofas in the Tres Marias archipelago.

Given the striking differences and apparent parapatry, these phylogenetic/evolutionary species units may also prove to be distinct biological species as well as upon further study. The discrete character variation among *Cynanthus* populations, focused on head and underparts, recalls strikingly the variation in the genus *Thalurania* (Escalante-Pliego and Peterson 1992), although the geographic distributions of the two genera are quite different.

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